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EXAMINER

QI, ZHI QIANG

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,286

Applicant(s)

BASTURK, NACI

Examiner

Mike Qi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4 and 7-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 10.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4,8,10-12,13,16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 5,726,723 (Wang et al).

Claims 1 and 13, AAPA (the specification of page 1, line 16 – page 5, line 2;
Figs. 1A) a display assembly (1) comprising:

- two superposed display devices able to take two different states wherein one of the display device is visible to the exclusion of the other, and that is a double structure, one structure being provided by a liquid crystal cell (26), and the liquid crystals being confined in a space delimited by two transparent substrates (30, 32) and having two switching states, the other structure being provided by a liquid crystal optical valve (28), and the liquid crystals being confined in a space delimited by two transparent substrates (31, 33) and having at least two switching states;

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- control means (23 and 9) allowing an appropriate voltage to be selectively applied to the display cell (26) and optionally to all or part of the valve (28) to cause each liquid crystal to switch from one state to another;
- a polariser (absorbent linear polariser 40) (as a first polariser) is arranged at the front of the display cell (26); a polariser (reflective polariser 44) (as a second back polariser) crossed with the front polariser or parallel thereto) is arranged at the back of the valve (28); so that when the cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data display from a light appearance to a dark appearance or vice versa, and correspondently, the first display device (display cell 26) would have a dark shade (dark background with light appearance) and the back polariser is a reflective polariser (such as claimed in **claim 1**) or vice versa, would have a light shade (white background with dark appearance) and the back polariser must be an absorbent polariser (as claimed in **claim 13**), wherein the liquid crystals (27) to switch from a transparent state to an absorbent state, or vice versa depending upon the type of the liquid crystal used;
- the first display device (display cell 26) and the second display device (optical valve 28) are superposed.

AAPA does not expressly disclose that only use front polariser and back polariser to display a dark shade (**claim 1**, such as white on black background) or to display a light shade (**claim 13**, such as black on white background).

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However, Wang discloses (col.12, line 61 – col.13, line 45; col.2, lines 23 – 32; Fig.12)) that a double LCD configuration only using front polarizer (144) and back polarizer (148) to make the device appear bright or appear dark, and in a positive operation mode, the display would be a black on white background, and in a negative operation mode, the display would be a white on black background, and using less polarizers would reduce the light absorption by the polarizer and simplifying the manufacturing process, and would increase the display contrast.

Therefor, it would have been obvious to those skilled in the art at time the invention was made to use only front polariser and back polariser as claimed in claims 1 and 13 for obtaining the improved display contrast.

Claims 4 and 16, AAPA discloses (page 2, lines 28 – 31; page 3, lines 16 – 27) that the cell (26) and the valve (28) using positive or negative anisotropy nematic liquid crystal would obtain same effect.

Claims 8 and 18, AAPA discloses (page 1, lines 29-31; Fig.1A) that the first display device is an analogue device such as hands (12,14,16) and dial (18).

Claim 10, AAPA discloses (Fig.1A) that the first display device such as the hands (12,14,16) and dial (18) essentially displaying time related data and the second display device (24) displaying time related data complementary to the preceding data or non time related data of sensor systems or processing systems such as alphanumeric, and integrated in a case of the timepiece.

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Claim 11, AAPA discloses (page 1, lines 22 – 31; Fig.1A) that the first display device (22) includes a dial (18) above which move the hour, minute and second hands (12,14 and 16).

Claim 12, AAPA discloses (page 1, lines 34-35; Fig.1A) that the second display device (24) is formed of a sandwich type structure including crystal (20), so that the second display device is combined with crystal.

3. Claims 2-3, 7, 9, 14-15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) and Wang as applied to claims 1, 4, 8, 10-12, 13, 16 and 18 above, and further in view of EP 0930522 (Masafumi et al).

Claims 2 and 14, it is a basic principle for the liquid crystal display device to be switched from one state to another state, so that the liquid crystal display is to be made visible or not visible, and using a mirror mask such as a reflector or a black mask such as a light shielding layer to increase the contrast, and that would have been at least obvious. Masafumi discloses (paragraph 0006) that if an electric field is applied to the liquid crystal by applying a voltage to a pair of electrodes on the transparent substrates holding the liquid crystal cell therebetween, the optical property of the liquid crystals is changed, thereby locally controlling transmission and absorption of light falling on the liquid crystal panel, so as to display the image signal, and that is a basic principle for the liquid crystal display device to be switched from one state to another state for display the image signal, and that is conventional.

Claims 3 and 15, the valve also is a liquid crystal display panel, and it is a basic

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principle to switch the liquid crystal panel with two opposite switching modes, so that would be light display or dark display, that is two types of data of the second display being observed with a contrast inversion, and that would have been at least obvious. Masafumi discloses (paragraph 0008 – 0010) that the time information and calendar information are displayed in black against a white background in a normal white mode, and also the information can be displayed in white against a black background in an inverse mode (normal black mode), and that is a basic principle to switch the liquid crystal panel with two opposite switching mode, and that is conventional.

Claims 7, 9, 17 and 19, using transparent substrates opposite the display cell and the valve are combined in a single transparent substrate that would be a conventional liquid crystal display structure, because the liquid crystal display structure uses transparent substrates to form the display device, and also can be combined into a single substrate including the cell and the valve. Since the digital part of the first display device and the second display device having same structure and share one substrate would simplify the manufacture process.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use the same structure for the two type display and share one substrate as claimed in claims 7, 9, 17 and 19 for simplifying the manufacture process.

Response to Arguments

4. Applicant's arguments filed on Jan.30, 2003 have been fully considered but they are not persuasive.

Applicant's **only** arguments are as follows:

1) The invention is that the two superposed contrast inversion display device does not have a polariser disposed between the two contrast inversion display devices, and the invention uses only two polarisers.

2) Claims 2 and 3 need to provide a reference to show the basic principle.

Examiner's responses to Applicant's **only** arguments are as follows:

1) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the invention is that the two superposed contrast inversion display device does not have a polariser disposed between the two contrast inversion display devices, and the invention uses only two polarisers) are not recited in the rejected claim(s). The reference EP 0926574 cited as the Applicant admitted prior art teaches a display assembly having two superposed display device in which does not specifically describe how many polarizers disposed, but that is a double superposed display structure. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2) Masafumi discloses (paragraph 0006) that if an electric field is applied to the liquid crystal by applying a voltage to a pair of electrodes on the transparent substrates holding the liquid crystal cell therebetween, the optical property of the liquid crystals is changed, thereby locally controlling transmission and absorption of light falling on the liquid crystal panel, so as to display the image signal, and that is a basic principle for the

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liquid crystal display device to be switched from one state to another state for display the image signal, and that is conventional. Also, Masafumi discloses (paragraph 0008 – 0010) that the time information and calendar information are displayed in black against a white background in a normal white mode, and also the information can be displayed in white against a black background in an inverse mode (normal black mode), and that is a basic principle to switch the liquid crystal panel with two opposite switching mode, and that is conventional.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi
July 28, 2003


TOANTON
PRIMARY EXAMINER